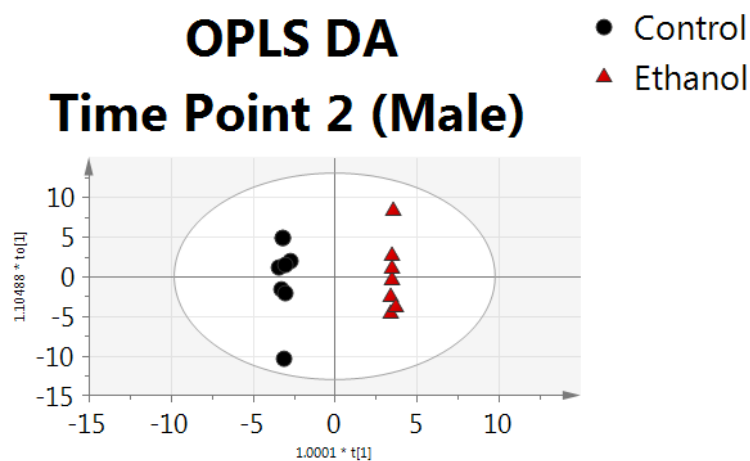
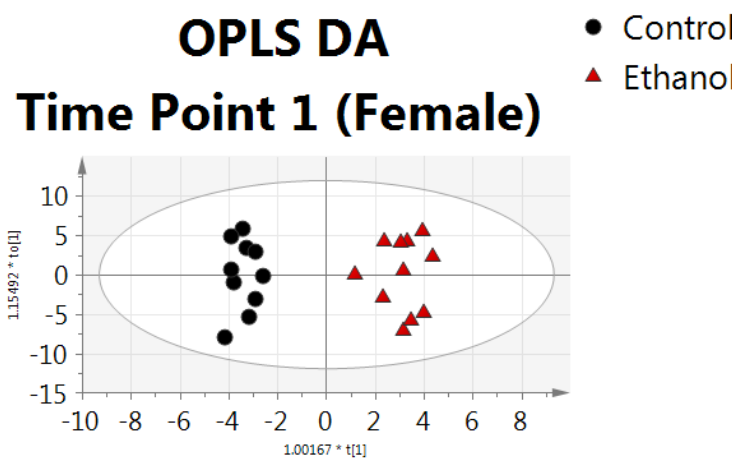
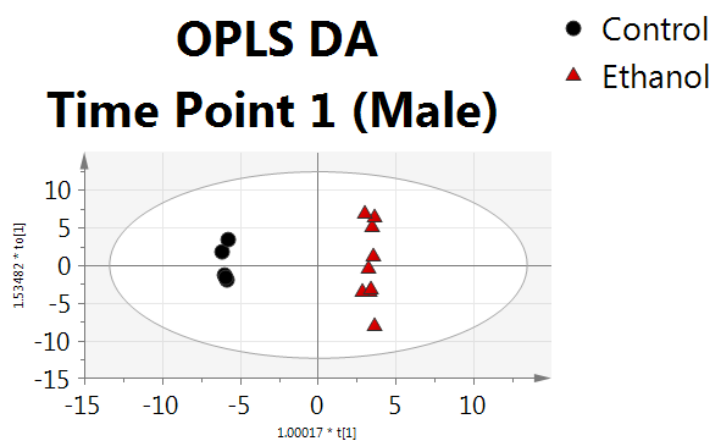


Sup Figure 1. Venn Diagram of detected metabolites in fecal and urine sample

FECES



URINE

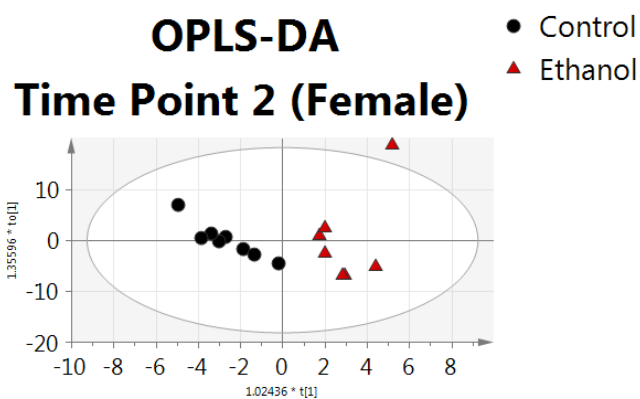
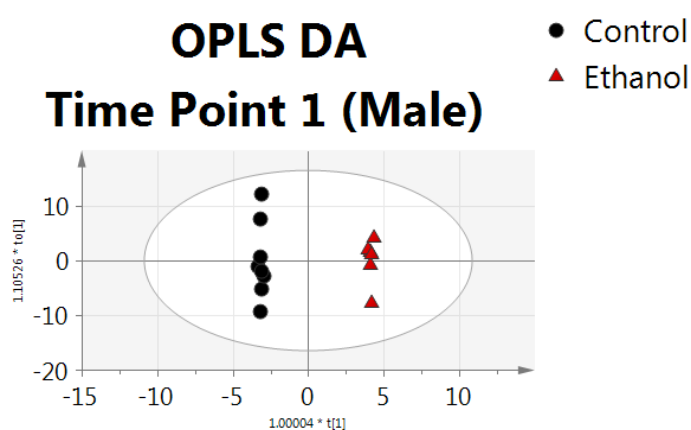
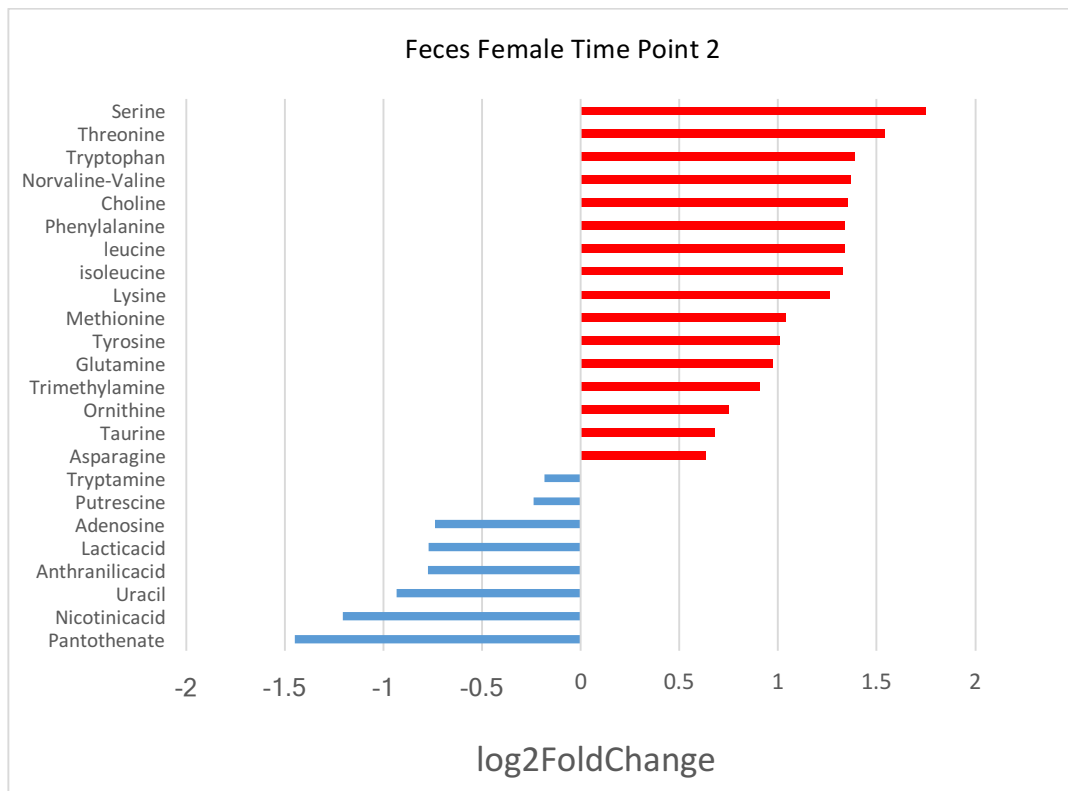
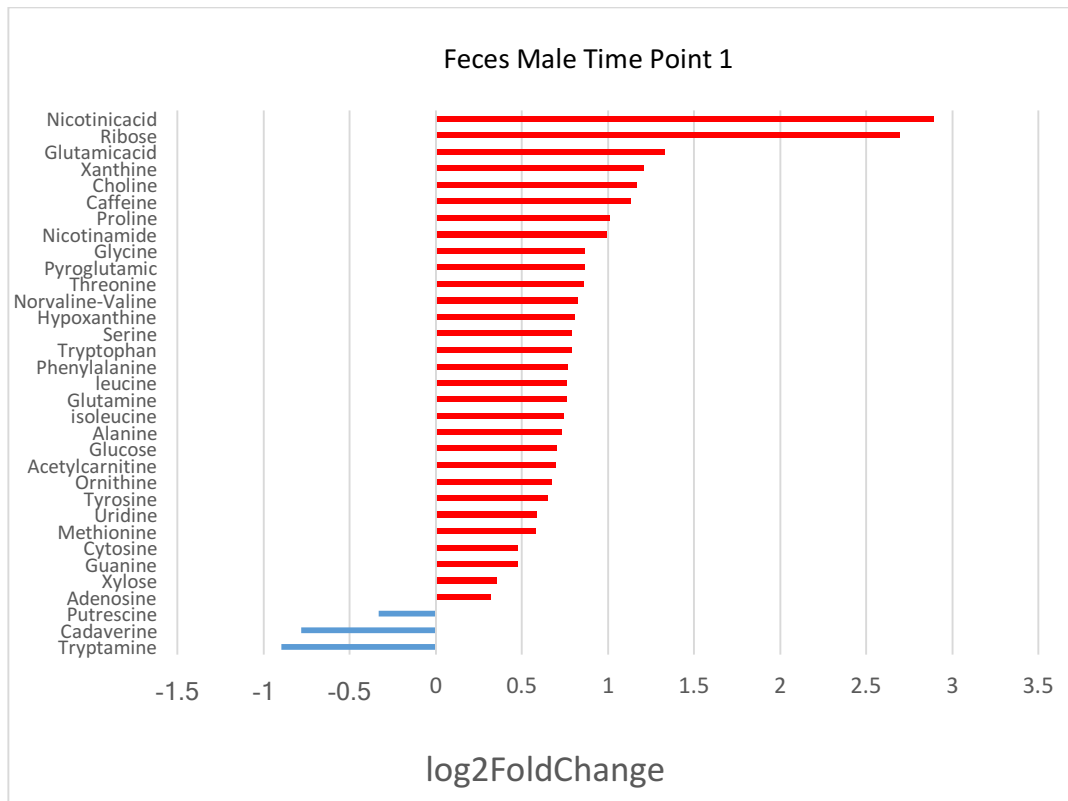
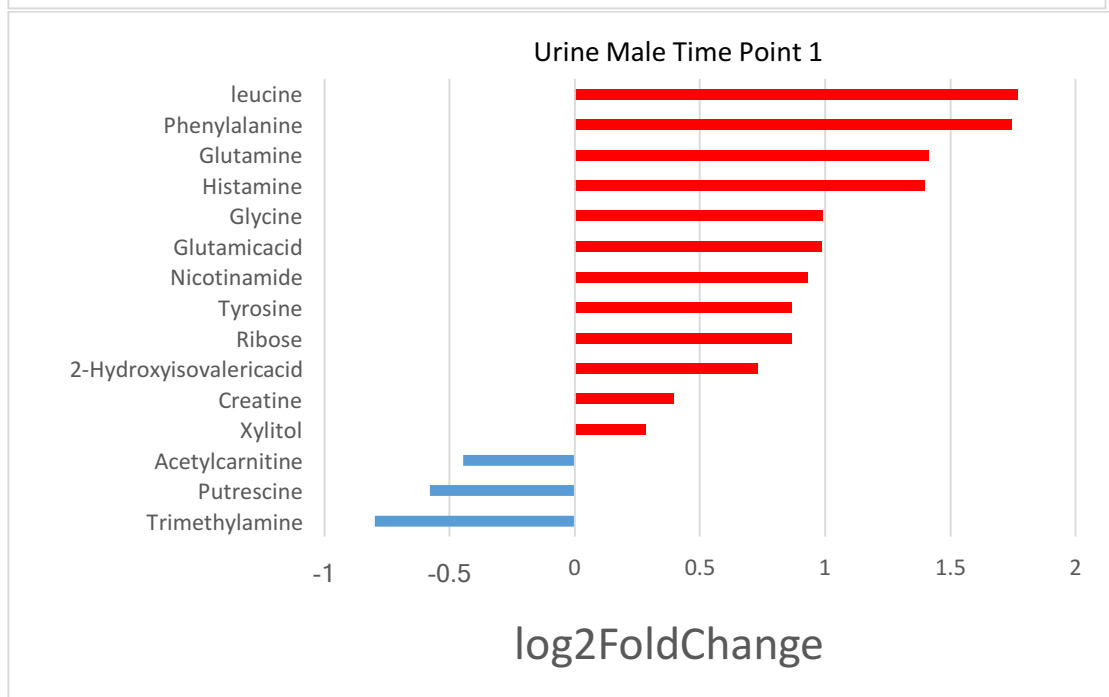
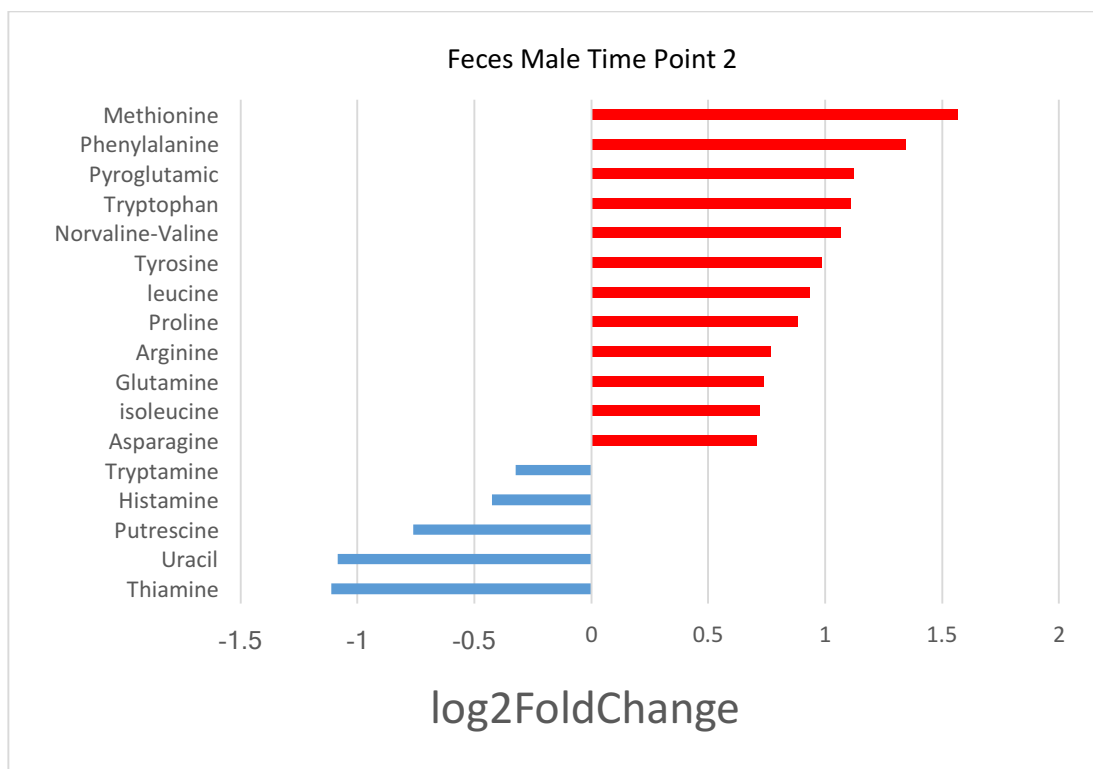


Figure S2: OPLS DA score plots of the models constructed for male and female mice samples separately, (x axis: first principal component $t[1]$, yaxis: the first component $to[1]$)





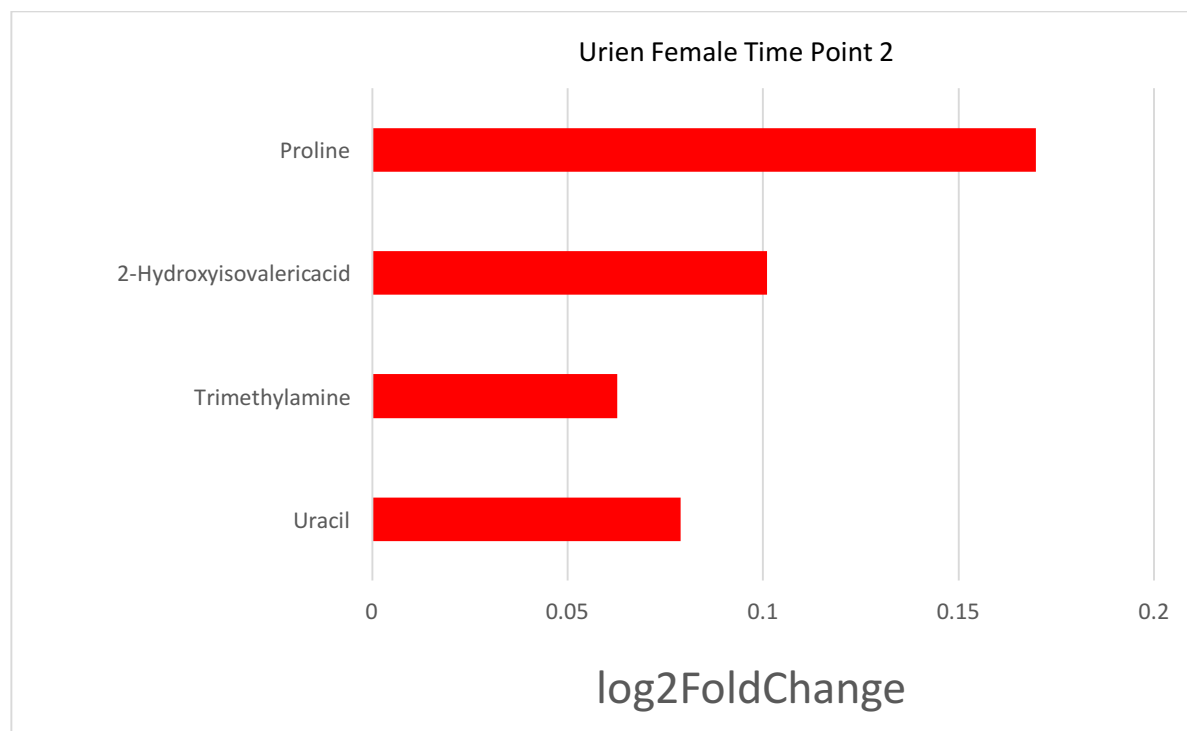


Figure S3: Bar plots of log2 Fold Change showing the altered metabolites ($p < 0.05$) based on the models constructed for male and female mice separately (x axis: log2 fold change value, y axis: compound name)

Table S1: Differentiated metabolites from the analyzed fecal samples, their related biochemical pathway and their trend of groups and time points are presented.

		1st Timepoint	2nd Timepoint
	Potential Related Biochemical Pathways	Ethanol Group	Ethanol Group
Choline	Glycine, serine and threonine metabolism		↑
Cytosine	Pyrimidine metabolism		↑
D-Glucose	Glycolysis / Gluconeogenesis, Pentose phosphate pathway	↑	↑
D-Xylose	Pentose and glucuronate interconversions		↑
Glycine	Glycine, serine and threonine metabolism, Purine metabolism		↑
Hypoxanthine	Purine metabolism		↑
L-Acetylcarnitine	Fatty acid degradation	↓	↑
L-Alanine	Alanine, aspartate and glutamate metabolism		↑
L-Arginine	Arginine biosynthesis, Arginine and proline metabolism	↑	
L-Asparagine	Alanine, aspartate and glutamate metabolism	↑	↑
L-Aspartic acid	Alanine, aspartate and glutamate metabolism, Arginine biosynthesis		↑
L-Glutamine	Arginine biosynthesis, Purine metabolism, Pyrimidine metabolism, Alanine, aspartate and glutamate metabolism /D-Glutamine and D-glutamate metabolism	↑	↑
L-Isoleucine / L-Leucine	Valine, leucine and isoleucine degradation/ biosynthesis	↑	↑
L-Lactic acid	Glycolysis / Gluconeogenesis, Fructose and mannose metabolism, Pyruvate metabolism	↓	

L-Lysine	Lysine biosynthesis/ degradation	↑	↑
L-Methionine	Cysteine and methionine metabolism		↑
L-Phenylalanine	Phenylalanine metabolism, Phenylalanine, tyrosine and tryptophan biosynthesis	↑	↑
L-Proline	Arginine and proline metabolism	↑	↑
L-Serine	Glycine, serine and threonine metabolism		↑
L-Threonine	Glycine, serine and threonine metabolism		↑
L-Tryptophan	Glycine, serine and threonine metabolism, Tryptophan metabolism, Phenylalanine, tyrosine and tryptophan biosynthesis	↑	↑
L-Tyrosine	Tyrosine metabolism, Phenylalanine metabolism, Phenylalanine, tyrosine and tryptophan biosynthesis	↑	↑
L-Valine	Valine, leucine and isoleucine degradation/ biosynthesis	↑	↑
Methylamine	Methane metabolism		↑
Niacinamide	Nicotinate and nicotinamide metabolism		↑
Nicotinic acid	Nicotinate and nicotinamide metabolism	↓	
Ornithine	Arginine biosynthesis, Arginine and proline metabolism	↑	↑
Putrescine	Arginine and proline metabolism	↓	↑
Pyroglutamic acid	Glutathione metabolism		↑
Taurine	Taurine and hypotaurine metabolism, Primary bile acid biosynthesis,		↑
Thiamine	Thiamine metabolism	↓	↓
Trimethylamine	Methane metabolism		↑
Tryptamine	Tryptophan metabolism	↓	↑
Uracil	Pyrimidine metabolism	↓	↓
Uridine	Pyrimidine metabolism	↑	

Table S2: Differentiated metabolites from the analyzed urine samples, their related biochemical pathway and their trend of groups and time points are presented.

		1st Timepoint	2nd Timepoint
	Potential Related Biochemical Pathways	Ethanol Group	Ethanol Group
(S)-3-Hydroxyisobutyric acid	Valine, leucine and isoleucine degradation	↑	↑
Cadaverine	Lysine degradation, Glutathione metabolism	↓	
D-Maltose	Starch and sucrose metabolism	↑	
D-Ribose	Pentose phosphate pathway	↑	↑
Glycine	Glycine, serine and threonine metabolism, Purine metabolism		↑
Guanine	Purine metabolism	↑	
Hydroxyphenyllactic acid	Tyrosine metabolism	↑	↑
Indolelactic acid	Tryptophan metabolism	↑	↑
L-Acetylcarnitine	Fatty acid degradation		↑
L-Cystine	Cysteine and methionine metabolism	↑	
L-Glutamic acid	Arginine biosynthesis, Alanine, aspartate and glutamate metabolism, Arginine and proline metabolism		↑
L-Glutamine	Arginine biosynthesis, Purine metabolism, Pyrimidine metabolism, Alanine, aspartate and glutamate metabolism /D-Glutamine and D-glutamate metabolism		↑
L-Isoleucine/L-isoleucine	Valine, leucine and isoleucine degradation/ biosynthesis	↑	↑
Niacinamide	Nicotinate and nicotinamide metabolism		↑

Putrescine	Arginine and proline metabolism		↓
Pyroglutamic acid	Glutathione metabolism		↑
Trimethylamine	Methane metabolism	↓	↓
Trimethylamine N-oxide	Methane metabolism	↑	
Uracil	Pyrimidine metabolism	↓	